

**What is Claimed:**

1. A mixing module for use in a dispenser system, comprising:

a housing having a front end, a rear end and an interior opening between said front end and rear end, and said housing having a cap covering at said front end;

a rod;

5 a mixing chamber received within said interior opening in said housing and having a rod reception passageway which receives said rod and at least one chemical inlet conduit opening into said rod reception passageway, and said rod being adjustably received within said rod reception passageway and having a forward end of travel that places said rod at the front end of said housing;

10 said housing further comprising a solvent feed passageway which extends in a rearward to forward direction within a wall portion of said housing, said cap covering comprising an outer and an interior cap portion, which in combination define a solvent feed space at said front end with the solvent feed space extending radially inward for solvent feed to said rod upon rod positioning at said front end.

2. The mixing module of claim 1 wherein said cap covering includes a first detachable cap member having a front wall and a radially outward positioned section in contact with said interior cap component, and said interior cap component having a forward wall with a front face spaced axially in from the front wall of said first detachable cap member so as to define said  
5 outer and inner cap portion combination between which solvent is free to flow radially inward to said rod.

3. The mixing module of claim 2 wherein said interior cap component is a second detachable cap member secured at the front end of said housing.

4. The mixing module of claim 3 wherein said housing includes a main housing body having a first flange member at the front end of said housing and a second flange member radially inward relative to said first flange member to define an annular solvent reception recess at the front end of said housing and into which said solvent feed passageway opens.

5. The mixing module of claim 4 wherein said interior cap component has a portion which covers over the annular solvent reception recess, and said interior cap component has one or more solvent flow through openings which are positioned to feed solvent from said solvent reception recess to the solvent feed space provided by said outer and interior cap portion

5 combination.

6. The mixing module of claim 5 wherein said interior cap component has a plurality of said solvent flow through openings circumferentially spaced about said interior cap component.

7. The mixing module of claim 2 wherein the forward wall of said interior cap component has a converging front wall portion which extends radially in to form an axial minimum thickness rod reception edge up to or past which said rod extends during reciprocating travel of said rod in said rod passageway.

8. The mixing module of claim 1 wherein said cap covering includes an outer front end cap component and an interior front end cap component positioned axially interior to said outer front end cap component, with said outer front end cap component being threadably secured to said interior front end cap component, and said interior front end cap component being

5 threadably received by a forward end of a main body of said housing.

9. The mixing module of claim 1 wherein said mixing chamber is formed of a cold flow block of material and said rod is sized for reciprocation within said cold flow material.

10. The mixing module of claim 9 first comprising a compression device which compresses said cold flow block of material toward the front end of said front end cap.

11. The mixing chamber of claim 10 further comprising a spacer positioned between said compression device and said cold flow block of material and said spacer having an axially extending section with a plurality of solvent flow through spaces circumferentially spaced about said axially extending section.

12. The mixing module of claim 1 wherein said housing includes a solvent reception cavity into which said solvent feed passageway opens and which feeds solvent to said feed passageway, with said solvent feed passageway extending entirely within the interior of the housing wall from said solvent reception cavity to said cap covering.

13. The mixing module of claim 12 wherein said solvent feed passageway extends parallel with a central axis of said rod passageway over a full axial length of said solvent feed passageway, and

5       said mixing module further comprising a solvent port formed in said housing and opening into said solvent reception cavity.

14. The mixing module of claim 1 wherein said cap covering includes an outer front cap component which is releasably secured relative to said housing and has a rod reception aperture formed in a forward wall portion, and said cap covering further comprising an interior front cap component which is positioned axially behind said outer front cap component to form said outer  
5       and interior cap portion combination for solvent passage and is also releasably secured relative to said housing and said interior front cap component, and said interior front cap component also has a rod reception aperture formed in a forward wall of said interior front cap component.

15. The mixing module of claim 14 wherein said front cap is threadably received on said interior front cap component and said interior front cap component is threadably received on a body portion of said housing.

16. The mixing module of claim 14 wherein the rod reception aperture of said outer front cap component is larger than said rod reception aperture of said interior front cap component.

17. A mixing module for use in foam dispenser, comprising:

a housing having a forward and a rearward end and an interior opening;

a cold flow material block received within the interior opening of said housing having a rod passageway formed in said material block;

5 a front cap assembly supported on the forward end of said housing and having an outer front cap and an interior front cap component with said outer front cap being releasably secured relative to said housing;

a compression device positioned so as to bias said cold flow block toward the forward end of said housing; and

10 a solvent passageway which feeds into a solvent pool region formed between axially separated wall portions of said outer front cap and interior front cap component, with said solvent pool region opening out to an area at the forward end of said housing where said rod reciprocates.

18. The mixing module of claim 17 wherein said interior front cap component is a front cap releasably supported relative to said support.

19. The mixing module of claim 17 wherein said outer front cap is threadably attached to said interior front cap component and said interior front cap is a front cap threadably attached to the front end of said housing.

20. A dispenser tip management system, comprising:

a housing having a front end and a rear end and an internal cavity and a capped forward end;

a fluid reception chamber received within said internal cavity and having a rod

5 passageway extending therein and at least one chemical reception passageway opening into said rod passageway; and

a rod received within said rod passageway;

and a solvent supply means which feeds solvent to a space formed between axially spaced radially extending portions of said capped forward end.

21. The management system of claim 20 further comprising means for physically contacting said forward capped end to clean build up of dispensed material on said forward capped end.

22. The management system of claim 21 wherein said means for physically contacting includes a reciprocating cleaning member driven by a driver.

23. The management system of claim 22 wherein said cleaning member is a brush with bristles.

24. The management system of claim 22 further comprising a transmission between said driver and cleaning member and said transmission including a crank device which converts rotational energy to linear energy.

25. The management system of claim 22 further comprising control means associated with said driver for preventing contact of said cleaning member with said capped forward end at a time when said chemical reception passageway is open relative to said rod passageway so as to allow for chemical dispensing.

26. The management system of claim 22 further comprising means for reciprocating the rod in said rod passageway and wherein said driver driving said rod is also the same driver driving said cleaning member.

27. The management system of claim 26 wherein said means for reciprocating includes a rod reciprocation transmission line which includes a one way clutch between said driver and said rod, and further comprising a cleaning member transmission line between said driver and cleaning member and said cleaning member transmission line including a one way clutch therein  
5 which is independent of the one way clutch of said rod reciprocation transmission line.

28. The management system of claim 22 further comprising compression means for biasing said fluid reception chamber toward the forward capped end of said housing.

29. A tip management system comprising:

a housing having a front end and a rear end and an internal cavity and a capped forward end;

a fluid reception chamber received within said internal cavity and having a rod  
5 passageway extending therein and at least one chemical reception passageway opening into said rod passageway;

a rod received within said rod passageway; and

means for moving a cleaning member between a cleaning position in contact with the capped forward end of said housing and a retracted position.

30. The system of claim 29 wherein said means for moving reciprocates said cleaning member and said cleaning member includes a brush member having bristles designed for contact with the capped end of said housing.

31. The system of claim 29 further comprising a solvent feed passageway which opens out at said capped end to supply solvent to said rod passing through an aperture formed in said capped end.

32. The system of claim 31 wherein said capped end includes a double wall with solvent clearance space therebetween which solvent clearance space opens out for solvent contact with said rod.

33. The system of claim 32 wherein said capped end includes a front cap and an interior cap with each being releasably secured relative to the front end of said housing.

34. The system of claim 29 further comprising a transmission between said driver and cleaning member and said transmission including a crank device which converts rotational energy to linear energy.

35. The system of claim 34 further comprising control means associated with said driver for preventing contact of said cleaning member with said capped forward end at a time when said chemical reception passageway is open relative to said rod passageway allowing for chemical dispensing.

36. The management system of claim 29 further comprising means for reciprocating the rod in said rod passageway and wherein said driver driving said cleaning member is also the same driver driving said means for reciprocating the rod in said rod passageway.

37. A tip management system for use with a foam dispensing system having a mixing module, comprising:

means for supplying solvent to a chemical outlet end of said mixing module; and

means for physically contacting the outlet end of said mixing module with a cleaning  
5 member that is driven by a driver into a cleaning contact position and into a retracted position  
relative with the outlet end of said mixing module.

38. The system of claim 37 wherein said means for physically contacting includes a  
transmission between said driver and said cleaning member and having a crank member in said  
transmission.

39. The system of claim 38 wherein said cleaning member is a brush with contact  
bristles.

40. The system of claim 37 wherein said means for supplying solvent includes a solvent  
source of a quantity sufficient for a flushing replenishment supply of an open solvent  
passageway extending within said mixing module and opening out at a capped end of said  
mixing module.

41. The system of claim 40 further comprising a solvent pump in line between said  
solvent source and said open solvent passageway and said solvent pump is a fixed volume  
metering pump.

42. The system of claim 41 wherein said pump generates in excess 25 psi in metering a  
fixed volume of solvent.

43. A mixing module for use in a foam dispensing system, comprising:  
a housing having an open rear end and an open front end;  
a mixing chamber received within said housing and having a rod passageway and a  
chemical feed passageway formed therein;



5           a releasable back cap releasably secured to said housing for closing off the open rear end of said housing and a front cap covering releasably secured to said housing, and said front cap covering,

          including a first cap component releasably secured to said housing and a second cap component releasably supported by said housing.

10           44. A method of maintaining an outlet tip of a dispensing mixing module clean, comprising:

          providing solvent to a solvent passageway in a housing of said mixing module having a front cap with a dispensing outlet and a reciprocable rod received in said module such that said solvent flows through a passageway which extends axially within a wall portion of said housing  
15   and which feeds a solvent pool area formed within an interior chamber defined by said front cap.

          45. The method of claim 44 further comprising providing means for physically wiping the outlet end of said mixing module, which means includes a driver and a cleaning member driven by said driver into and out of contact with said mixing module.

          46. A mixing module comprising:

          a housing having an interior cavity;

          a mixing chamber received within the interior cavity of said housing;

          a rod which is dimensioned for reciprocation in a passageway formed in said housing;

5           at least one chemical inlet port formed in said mixing chamber; and

          a solvent filling port formed in said housing and having a releasable solvent chamber closure cap engaged with said port.

          47. The mixing module of claim 46 wherein said housing further includes a solvent flow feed port which opens into said interior cavity and is spaced from said solvent filling port.

48. The mixing module of claim 47 wherein said mixing chamber is formed of a cold flow material, and said mixing module further comprising said compression means biasing said mixing chamber forward against a capped end of said housing and a spacer received within being positioned axially between said compression means and mixing chamber and having an interior solvent pocket and access ports or slots opening into said solvent pocket.

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